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ABSTRACT

This paper reports the results of a survey undertaken to determine (1) the extent to which teacher competencies are utilized, and (2) when teachers should receive training in the sub-category or terminal tasks. The survey instrument, sent to 950 high school teachers, involved competencies recommended in the 10 U.S. Office of Education Model Training Programs, with each general competency including 7 to 28 terminal tasks or sub-competencies. Approximately one-third of the teachers sampled responded. Five general competencies were recommended for inclusion at the preservice level by more than 50 percent of the respondents. Five were recommended by less than half, with scores from 24 to 49 percent indicating a lack of certainty about training for every general competency. (Authors/PEB)

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THE DETERMINATION OF COMPETENCIES UTILIZED BY HIGH SCHOOL TEACHERS

by

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Paper presented to the National Association for Research in Science Teaching, Chicago, Illinois, April 18, 1974.

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I. Rationale: Both initial training and continuing education of teachers should include development of the competencies currently used by teachers. Additional competencies should be added as they are identified as leading to improved teaching.

II. Purpose : To determine (1) the extent to which competencies are utilized and (2) when teachers should receive training in the sub-competency or terminal tasks.

III. Procedure: A fifty percent random sample of academic high school teachers (N = 950) were each sent a survey instrument that included one of the following general competencies recommended in the ten U.S. Office of Education Model Training Programs:

1. Specifying Learning Goals
2. Assessing the Student
3. Diagnosing Student Characteristics
4. Planning Long-Term and Short-Term Learning Programs
5. Guiding Students in their Learning Activity
6. Guiding Off-Task Student Behavior
7. Employing Teamwork with Colleagues
8. Enhancing Personal and Professional Development
9. Using Instructional Media and Laboratory Equipment
10. Relating to Local Conditions

Each general competency included 7 to 28 terminal tasks or sub-competencies.

Approximately one-third of the subjects responded, and 274 provided information about their characteristics, performance of the sub-competencies, and when teacher should be trained in each Table 1 includes data about the sample.

Survey responses were processed by the "Statistical Packages for the Social Sciences (SPSS) Version X, May 20, 1973. The following tables provide data about the questions regarding utilization and recommendations for initial and inservice training.

IV. Results : Scores were calculated as a percentage of a group who responded to each question for competencies, or terminal tasks and are listed in Tables 2 through 11.

Table 12 includes scores for general competencies used by teachers and their recommendations for placement in training programs.

Utilization scores ranged from 79% for enhancing their own personal and professional development to a low of 26% for "diagnosing student characteristics."

"Guiding student learning activity" received a positive response from 78% while "employing teamwork" was reported by only 35%.

Five general competencies are recommended for inclusion at the pre-service level by more than 50% of the respondents and five were recommended by less than half. Scores from 24% to 49% indicate a lack of certainty about training for every general competency.

V. Discussion: Comments by these subjects indicate that the concept of teaching competency is not understood by many classroom teachers and is considered a mechanistic approach to describing teacher activities. The results indicate that teachers will be able to identify competencies and terminal tasks needed in their classrooms more precisely and will be able to recommend more appropriate training if enabling objectives are identified for each terminal task.

Table 1. Characteristics of Respondents

Group	N	Age $\bar{X}$	Sex		Exp.	Educational Level					Training	
			F	M		O	BA	+	M	+	+	-
1	29	37	55	45	55	3	21	38	38	0	45	55
2	26	39	40	60	58	0	16	44	24	16	58	42
3	29	35	48	52	51	3	25	32	31	7	50	50
4	32	35	61	39	50	0	35	23	29	13	55	45
5	32	34	56	44	54	3	28	31	31	6	41	59
6	33	44	52	48	57	12	9	36	33	9	36	64
7	18	33	61	39	50	0	22	33	33	11	28	72
8	27	35	74	26	44	0	22	41	30	7	22	78
9	22	31	68	32	54	0	32	32	36	0	32	68
10	26	34	65	35	61	4	23	31	31	11	31	69
$\bar{X}$	27	36	58	42	53	3	23	34	32	8	40	60

Table 2. Specifying Learning Goals

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Identify learning objectives which refer to cognitive, affective and psychomotor behavior.	97	0	3	63	6	31
2.	Communicate to pupils, teachers, parents, and others, the reasons for establishing learning objectives.	86	11	3	41	20	39
3.	Translate broad societal aims for schools into relevant learning goals.	79	14	7	52	13	35
4.	Interpret learning outcomes in terms of written performance standards.	72	17	11	62	6	31
5.	State in writing, learning objectives of each type, (cognitive, affective and psychomotor) in terms of student behaviors which are observable and measurable.	66	31	0	69	10	31
6.	Specify in writing, any relationship among learning objectives from one curricular area to another.	45	52	3	41	21	38
7.	Specify in writing any relationships among the cognitive, affective and psychomotor learning objectives	35	65	0	52	10	38

Training

IT - Initial training prior to teaching

IS - Inservice Training

Ø - Not sure or no opinion about training

Table 3. Assessing the Students

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Determine evaluation techniques which are appropriate for the related learning objective.	85	8	4	66	20	14
2.	Develop records regarding pupil achievement.	81	19	0	62	16	22
3.	Maintain records regarding pupil achievement.	81	19	0	69	12	19
4.	Utilize test results as one piece of information to identify a pupil's learning difficulties.	77	19	4	61	20	19
5.	Evaluate the attending behavior of learners by observing posture, gaze level, and responses.	77	19	4	46	19	35
6.	Observe informal learner reactions to your instruction.	73	15	12	51	12	37
7.	Demonstrate competency in the use of observational methods to evaluate pupil's accomplishments of various learning objectives.	69	19	12	61	12	27
8.	Demonstrate procedures which involve the learners in self-evaluation.	58	39	3	58	16	26
9.	Demonstrate competency in the use of interview methods to evaluate pupils' accomplishments of various learning objectives.	58	27	15	47	19	34
10.	Interpret posttest results for determining mastery of a given learning task.	58	38	4	58	12	30
11.	Demonstrate competency in the use of rating methods to evaluate pupils' accomplishments of various learning objectives.	54	19	26	35	16	49
12.	Administer and score appropriate posttests.	50	46	4	54	4	42

Table 3
Continued

COMPETENCY	Perform			Training		
	Yes	No	?	IT	IS	Ø
13. Involve the pupil in evaluating and interpreting his test results.	50	46	4	47	23	30
14. Construct appropriate posttests.	46	50	4	47	16	37
15. Interpret standardized aptitude and achievement tests.	46	50	4	58	20	22
16. Initiate case studies of pupils when they cannot successfully complete a learning task.	44	48	8	71	21	8
17. Construct appropriate pretests.	42	50	8	47	12	41
18. Interpret placement test results to identify a pupil's achievement level within a curricular area.	39	54	8	50	20	30
19. Calculate basic descriptive statistics such as mean, median, mode, standard deviation.	39	62	0	77	4	19
20. Demonstrate competency in the use of situational measures (e.g. role playing situations) to evaluate pupils' accomplishments of various learning objectives.	35	54	11	31	12	47
21. Construct criterion-referenced tests.	27	50	28	51	4	45
22. Interpret pretest results for determining a pupil's next learning task within a curricular area.	27	62	11	41	12	47
23. Construct norm-referenced tests.	23	58	19	43	8	49
24. Demonstrate competency in reporting test results in numerical, graphic, or verbal form to other staff members.	23	69	8	39	16	45
25. Administer and score placement tests.	23	73	4	43	20	37

Table 3
Continued

COMPETENCY	Perform			Training		
	Yes	No	?	IT	IS	Ø
26. Select appropriate placement tests to identify a pupil's achievement level in a given curricular area.	23	73	4	46	19	36
27. Score standardized aptitude and achievement tests.	23	73	4	58	16	27
28. Administer standardized aptitude and achievement tests.	23	77	0	62	27	11

Table 4. Diagnosing Student Characteristics

	COMPETENCY	Perform Yes	Perform No	Perform ?	Training IT	Training IS	Training Ø
1.	Report in writing a pupil's emotional condition as observed by you in a variety of learning activities.	72	28	0	48	27	25
2.	Report in writing a pupil's social attitudes and behavior as observed by you in a variety of learning activities.	48	48	4	55	24	31
3.	Identify appropriate tests which could be used to improve the appraisal of a pupil's general intellectual capacities.	45	48	7	59	13	28
4.	Report in writing a pupil's general intellectual functioning as it is observed by you in a variety of learning activities.	45	55	0	55	20	25
5.	Identify appropriate sources which could offer additional information to improve the appraisal of a pupil's physical condition.	24	72	3	42	14	44
6.	State in writing a summary of the accumulated data pertaining to the pupil's social attitudes and behaviors.	24	76	0	35	28	37
7.	Identify other sources and evaluative techniques which could be used to improve the appraisal of a pupil's social attitudes and behavior.	21	72	7	38	3	59
8.	Report in writing a pupil's sensory functioning, motor development, and general health.	21	76	3	55	7	38
9.	Identify other sources and evaluative techniques which could be used to improve the appraisal of a pupil's emotional condition.	17	69	14	31	14	55
10.	State in writing a summary of the accumulated data pertaining to intellectual capacity, taking account of the pupil's background, development level, and reaction to testing.	17	79	3	45	13	42

Table 4
Continued

	COMPETENCY	Perform Yes	Perform No	Perform ?	Training IT	Training IS	Training Ø
11.	State in writing a summary of the accumulated data pertaining to the pupil's emotional condition.	14	86	0	45	17	38
12.	State in writing a summary description of a pupil's learner characteristics acknowledging the relationship among his inteleectual, physical, emotional, and social characteristics.	10	83	7	38	14	48
13.	Describe in writing the family, community and cultural background of the pupil and relate information to what is known about the social foundations of education.	10	86	4	45	14	41
14.	State in writing a summary of the accumulated data pertaining to the pupil's sensory functioning, motor development, and general health.	0	86	14	28	14	58

Table 5. Planning Learning Programs

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Select instructional methods and learner activities appropriate for the tasks.	100	0	0	69	9	22
2.	Select materials and equipment that the pupil will employ in the given learning tasks.	97	3	0	75	6	19
3.	Select and use a variety of media, such as books, movies, slides, programmed texts, audio-tutorial modules tapes and laboratory equipment.	94	6	0	69	3	28
4.	Select and sequence the learning program so that it matches the objectives.	91	6	3	69	9	22
5.	Provide for the pupil to employ self-direction in performing the learning task.	84	16	0	72	6	22
6.	Estimate when the pupil will complete the learning task.	81	19	0	41	19	40
7.	Utilize data on the pupil's characteristics as a learner in selecting the method, setting, and criterion for his learning.	72	22	6	56	12	32
8.	Write and implement a plan to assess the pupil's performance of the learning task for use in planning instruction.	69	25	3	57	6	37
9.	State in writing a long-term program that spells out the relative emphasis to be placed on different types of learning goals and on work within one or more curricular areas.	66	31	0	56	16	28
10.	Utilize a pretest to specify what learning objectives a pupil will next undertake.	63	37	0	69	12	19

Table 5
Continued

COMPETENCY	Perform Yes	Perform No	Perform ?	Training IT	Training IS	Training Ø
11. Develop in writing and implement a plan for the pupil's group learning situations.	56	38	3	56	9	35
12. Provide a written analysis of current curriculum materials that includes textbooks, audiovisual or laboratory equipment.	53	41	6	47	9	44
13. Develop in writing and implement a plan by which the pupil will request assistance or teacher will volunteer help.	50	38	12	35	12	53
14. State in writing the prerequisite performances needed by each learner.	41	50	9	54	9	37
15. Develop in writing and implement a plan for interrelating the pupil's learning task in one curricular area with concurrent learning tasks in other areas.	38	59	3	44	12	44
16. Write and implement a plan to provide for the pupil to take alternative routes toward accomplishing the learning objectives.	34	59	7	53	3	44

Table 6. Guiding Student Learning Activity

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Assist the pupil immediately by examples, questions, prompting, hypothesizing, clarifying, organizing data, etc.	100	0	0	75	6	19
2.	Arrange furntiture, materials, and learners so the facilities are conducive to conducting instruction and the learners are comfortable and can see and hear.	97	3	0	78	3	19
3.	Make provisions for controlling pupil movement and noise.	97	3	0	66	16	18
4.	Collect or return papers and instructional materials with minimum disturbance.	97	3	0	66	16	18
5.	Diagnose nature of learning difficulty by listening to pupil questions, referring to appropriate records, and consulting with colleagues.	94	3	3	66	15	19
6.	Orient pupils to the schedule for the learning plans, to any new materials or media they will be using, and to any guidelines they will be following.	94	6	0	72	9	19
7.	Use learner's ideas during the course of a lesson.	94	6	0	62	12	26
8.	Systematically praise learners both verbally and non-verbally in order to reinforce productive behavior.	91	3	6	75	0	25
9.	Schedule activity so that pupils can work on an independent, pupil-team, or subgroup basis as called for in individualized learning plans.	91	9	0	72	6	22
10.	Ask questions which require recall of facts.	88	9	3	63	3	34

Table 6
Continued

	COMPETENCY	Perform Yes	Perform No	Perform ?	Training IT	Training IS	Training Ø
11.	Identify hazards to the physical safety of learners and initiate corrections when needed.	85	6	9	65	3	32
12.	Ask probing questions.	85	9	6	63	0	37
13.	Establish and maintain eye contact.	84	3	13	63	9	28
14.	Provide time for giving pupils posttests as needed, or to plan revised or new assignments for students requiring them.	84	13	3	66	12	22
15.	Ask questions which have no one correct answer.	81	19	0	53	9	38
16.	Vary the stimulus situations by pausing and pacing.	72	9	19	59	6	35
17.	Schedule the pupils in the class to provide them with access to the space, equipment, and learning materials they require.	69	16	15	59	9	32
18.	Provide the pupil with a peer tutor.	63	37	0	44	9	47
19.	Convene special groups for specific learning tasks.	56	38	6	53	0	47
20.	Record the finding of the diagnosis in those situations revealing a significant pupil obstacle or inadequacy of curriculum materials.	53	34	12	42	9	49
21.	Ask questions which require the student to express emotion.	53	41	6	31	12	57
22.	Write and implement a plan that provides a choice of fun-type activities to stimulate interests of pupils who complete assigned learning tasks.	50	47	3	44	12	34

Table 6
Continued

COMPETENCY	Perform			Training		
	Yes	No	?	IT	IS	Ø
23. Describe in writing the extent to which the pupil has utilized alternative approaches to the learning tasks.	13	75	12	42	16	42

Table 7. Guiding "Off-Task" Behavior

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Utilize more than one approach to controlling and motivating behavior.	100	0	0	62	9	29
2.	Reinforce acceptable behavior of pupil.	94	3	3	66	6	28
3.	Use consultation from colleagues and para-professionals in dealing with behavior direction.	85	9	6	39	21	40
4.	Identify sources of deviant behavior.	79	3	18	51	6	43
5.	Intervene appropriately and consistently in cases of deviant behavior.	76	6	18	51	9	40
6.	Involve pupils periodically in self-evaluation and control of behavior.	76	24	0	48	15	37
7.	Determine sources of inter-personal conflicts.	70	18	12	36	9	55
8.	Involve pupils in deciding on acceptable pupil behavior.	70	24	6	48	12	40
9.	Distinguish between habitual and temporary deviant behavior and interpersonal conflict.	67	24	9	54	9	37
10.	Assist in the resolution of interpersonal conflicts.	64	24	12	42	15	43
11.	Initiate case studies when behavior continually obstructs learning activities.	42	52	6	51	12	37

Table 8. Employing Teamwork with Colleagues

COMPETENCY	Perform			Training		
	Yes	No	?	IT	IS	Ø
1. The teacher should participate in team activity by revealing the way he/she sees and does things.	56	33	11	28	33	39
2. The teacher should participate in team activity by trying out new patterns of thought and behavior in order to experience the process of change.	45	33	22	23	23	54
3. The teacher should evaluate team activity by examining the patterns of communication in the team.	45	44	11	23	17	60
4. The teacher should participate in team activity by explaining his/her behavior in a situation in order to receive back clear and accurate information concerning the relevancy and effectiveness of the behavior.	39	39	22	33	28	39
5. The teacher should evaluate team activity by examining the decision-making procedures of the team.	39	50	11	34	17	49
6. The teacher should evaluate team activity by observing the behavior of the team from the point of view of what its purpose or function seems to be.	39	50	11	28	28	34
7. Define the organizational patterns of teams active in the operation of the school.	33	33	34	28	28	44
8. The teacher should participate in team activity by helping colleagues learn how to learn from the process of presentation-experimentation-feedback.	28	50	22	22	17	61

Table 8
Continued

COMPETENCY	Perform			Training		
	Yes	No	?	IT	IS	Ø
9. Define the differentiated roles present on each team active in the operation of the school.	28	50	22	39	17	44
10. The teacher should evaluate team activity by examining the nature of the discussion to determine the emphasis which is placed on content and process.	28	50	22	17	17	66
11. The teacher should evaluate team activity by identifying forces which disturb team work.	22	56	23	28	23	49
12. The teacher should evaluate team activity by identifying consulting resources needed by team.	17	56	27	33	23	44

Table 9. Enhancing Personal and Professional Development

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Analyze personal strengths and weaknesses which affect his own professional behavior.	100	0	0	56	19	25
2.	Display self-acceptance by being attentive and responsive to pupils.	100	0	0	55	11	34
3.	Exhibit friendly and cooperative behavior in relationships with other members of the school staff and parents.	97	3	0	45	19	36
4.	Develop a positive attitude toward inquiry and experimentation.	94	0	6	63	14	23
5.	Develop a positive attitude toward change where improvement is the likely result.	94	3	3	71	19	10
6.	Use effectively the tools of communication.	94	3	31	56	11	33
7.	Identify your own values which affect professional behavior.	94	3	3	37	18	45
8.	Display empathy and concern for children, including withdrawn hostile, and non-productive children.	94	3	3	44	7	49
9.	Demonstrate flexibility in providing for any pupil ideas, wishes, feeling that do not coincide with your own.	89	0	11	45	11	44
10.	Develop a positive attitude toward individual responsibility and initiative.	89	0	11	56	8	36

Table 9
Continued

	COMPETENCY	Perform Yes	Perform No	Perform ?	Training IT	Training IS	Training Ø
11.	Show evidence of confidence and emotional control in responding to pressures and problems.	85	4	11	45	14	41
12.	Display objectivity and rationality in dealing with each pupil's intellectual, personal, and social problems.	82	11	7	44	11	45
13.	Accept the impossibility of effectively relating with every child and adult in every circumstance.	78	22	0	40	11	49
14.	Find ways of dealing with conflict, in order that it does not incapacitate one's potential behavioral effectiveness.	74	4	22	52	4	44
15.	Demonstrate flexibility by not becoming uneasy as children display antisocial or asocial behavior.	74	15	11	52	11	37
16.	Develop techniques to deal with fear, hate, love and anger.	74	22	4	41	23	36
17.	Analyze attitudes toward authority, supervision, learning which affect professional behavior.	74	22	4	34	11	55
18.	Modify personal behavior after interpreting evidence of performance.	70	7	23	41	8	51
19.	Develop a positive attitude toward political power and public relations as means for changing local conditions.	48	52	0	19	22	59
20.	Formulate in writing a general plan of self-development.	33	52	15	41	14	45
21.	Participate in activities which will help reveal those personal traits which tend to limit his flexibility of behavior.	26	33	41	14	11	75

Table 10. Using Media and Laboratory Equipment

	COMPETENCY	Perform Yes	Perform No	Perform ?	Training IT	Training IS	Training Ø
1.	Use charts to clarify and emphasize main ideas and/or to motivate new or additional study.	91	9	0	95	0	5
2.	Use films to clarify and emphasize main ideas and/or to motivate new or additional study.	82	14	4	87	0	13
3.	Use 35mm slides, or filmstrips to clarify and emphasize main ideas and/or to motivate new or additional study.	82	18	0	82	0	18
4.	Use physical models, word models or mathematical models to clarify and emphasize main ideas and/or to motivate new or additional study.	77	14	9	82	0	18
5.	Use art prints, or pictures to clarify and emphasize main ideas and/or to motivate new or additional study.	77	18	51	91	0	9
6.	Use periodicals to clarify and emphasize main ideas and/or to motivate new or additional study.	77	23	0	91	5	4
7.	Use audio tapes or records to clarify and emphasize main ideas and/or to motivate new or additional study.	77	23	0	73	10	27
8.	Use overhead transparencies to clarify and emphasize main ideas and/or to motivate new or additional study.	68	32	0	96	0	4
9.	Use maps or globes to clarify and emphasize main ideas and/or to motivate new or additional study.	59	32	9	77	0	23
10.	Use programmed textbooks to clarify and emphasize main ideas and/or to motivate new or additional study.	46	50	4	82	0	18

Table 10
Continued

COMPETENCY	Perform			Training		
	Yes	No	?	IT	IS	Ø
11. Use auto-instructional packages to clarify and emphasize main ideas and/or to motivate new or additional study.	32	46	22	50	0	50
12. Use commercial laboratory kits to clarify and emphasize main ideas and/or to motivate new or additional study.	27	55	18	55	5	40
13. Use microforms to clarify and emphasize main ideas and/or to motivate new or additional study.	27	59	14	51	0	49
14. Use videotapes to clarify and emphasize main ideas and/or to motivate new or additional study.	23	73	4	73	0	27
15. Use computer terminals to clarify and emphasize main ideas and/or to motivate new or additional study.	5	82	13	28	14	58

Table 11. Relating to Local Conditions

	COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Adapt available instructional materials to fit certain local conditions.	89	8	3	50	27	23
2.	Adapt general instructional methods and techniques to fit certain local conditions.	84	8	8	62	16	22
3.	Communicate with parents regarding local conditions and school problems.	84	8	8	50	20	30
4.	Identify social, political and economic factors which influence educational conditions in the school, local school district, community, county, and state.	77	15	8	50	23	27
5.	Conduct public relations.	62	15	23	43	12	45
6.	Identify ways in which other teachers have approached and solved problems and issues related to local conditions.	58	15	27	35	27	38
7.	Participate in developing strategies for effecting change in local factors and conditions which influence school conditions.	35	58	7	27	15	58

Table 12. Utilization of Teacher Competencies

	GENERAL COMPETENCY	Perform			Training		
		Yes	No	?	IT	IS	Ø
1.	Specifying learning goals for students.	69	27	4	53	12	35
2.	Assessing the Students.	48	44	8	53	16	31
3.	Diagnosing Student Characteristics.	26	69	5	44	16	40
4.	Planning Learning Programs for Students.	68	28	4	58	10	32
5.	Guiding Student Learning Activity.	78	19	5	60	9	31
6.	Guiding "Off-Task" Behavior of Students.	75	17	3	50	11	39
7.	Employing Teamwork with Colleagues.	35	45	20	28	23	49
8.	Enhancing Personal and Professional Development.	79	12	9	45	13	42
9.	Using Instructional Materials and Media.	57	37	6	74	2	24
10.	Relating to Local Conditions.	70	18	12	45	20	35
	$\bar{X}$	61	31	8	51	13	36

Training

IT - Initial Training prior to teaching

IS - Inservice Training

Ø - Not sure or no opinion about training